<center>**REMARKS/ARGUMENTS**</center>

I. STATUS OF CLAIMS

Claims 1-12, 14-15, 18-19, 22 and 26-32 are pending. Claims 1, 10, 14, 19 and 26 have been amended. It is respectfully submitted that no new matter has been added and that all claims are fully supported by the specification. Claims 13, 16-17, 20-21 and 23-25 have been cancelled without disclaimer or prejudice to the subject matter contained therein.

II. Claim Rejections under 35 U.S.C. §§ 112 and 101

Claims 29-31 have been rejected under 35 U.S.C § 112, second paragraph, as being incomplete for omitting essential elements.

Claim 29 has been amended to include the feature that the second communication device is configured to communicate with the first communication device. It is respectfully submitted that this obviates the rejection of claims 29-31 under 35 U.S.C. § 112 and therefore, it is respectfully requested that the rejection be withdrawn.

Claims 1-9 have been rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter.

Claim 1 has been amended to make it clear that determining a transfer function of a pre-emphasis filter that is optimized according to predefined optimization criteria thereby determines the pre-emphasis filter. It is respectfully submitted that this obviates the rejection of claims 1-9 under 35 U.S.C. § 101 and therefore, it is respectfully requested that the rejection be withdrawn.

III. Claim Rejections under 35 U.S.C. § 103(a)

Claims 1-7 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Vilcocq et al. (U.S. 2004/0041638).

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Claims 8-9, 14-22, 24 and 30-31 were rejected under 35 U.S.C. 103(a) as being unpatentable over Vilcocq et al., and further in view of Perrott et al. (U.S. Patent No. 6,008,703).

Claim 26 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Vilcocq et al., and further in view of Hasson (U.S. 2003/0123566).

Claims 27-28 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Vilcocq et al. and Hasson, and further in view of Perrott et al.

These rejections are respectfully traversed and reconsideration is respectfully requested.

Claim 1 is directed to a method that includes, among other features, determining a transfer function of a pre-emphasis filter that is optimized according to predefined optimization criteria to thereby determine the pre-emphasis filter, wherein the optimization criteria are related to an input to the pre-emphasis filter and are related to an input to a voltage controlled oscillator of an analog fractional-N phase locked loop unit.

In the rejection of claim 1, the Examiner relies on paragraphs 12-13 of Vilcocq. However, in paragraph 13, Vilcocq discloses using a digital filter as a pre-accentuation filter that has a transfer function defined judiciously so that just one coefficient, called the determining coefficient, depends on the open-loop gain of the phase locked loop (PLL). Vilcocq goes on to state in paragraph 13 that this simplifies a calibration algorithm implemented by the means of automatic calibration of the pre-accentuation filter. Specifically, these means may then comprise a simple table giving, <u>as a function of a parameter of quality of the modulation of the output signal of the synthesizer</u>, the value of the <u>determining coefficient which must be programmed into the pre-accentuation filter</u>. This parameter is preferably the phase error in the <u>output signal</u> when this signal is phase-modulated or the frequency error when this signal is frequency-modulated (mean square error). However, it may also involve the modulation index of <u>the output signal.</u>

Thus, it is clear that Vilcocq discloses using a parameter related to the <u>output signal</u> of the PLL to determine a coefficient with which to program the pre-accentuation

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filter. The coefficient is found in a simple table based on the <u>output signal</u> of the PLL. There is no mention or suggestion to consider an <u>input</u> to the pre-accentuation filter or an <u>input</u> to a VCO <u>within</u> the PLL. The Examiner maintains that one skilled in the art would recognize that optimization criteria of Vilcocq not only includes the input of the VCO, but also takes into account the effects of the VCO without saying <u>how</u> these criteria are taken into account and used by Vilcocq, or how one skilled in the art, based on the teaching of Vilcocq, knows Vilcocq takes these criteria into account. Furthermore, there is no mention by the Examiner with respect to how one skilled in the art would take into account optimization criteria relating to an input to the pre-accentuation filter in light of the teaching of Vilcocq. This is because, unlike the claimed invention, Vilcocq does not disclose or even suggest how to use optimization criteria relating to the input to the pre-accentuation filter <u>and</u> optimization criteria relating to the input to the VCO within the PLL. Vilcocq simply teaches one skilled in the art to monitor the overall output signal of a PLL and based upon the output signal of the PLL, select a coefficient from a table with which to program the pre-accentuation filter. Indeed, paragraph 50 of Vilcocq makes it clear that his only teaching is to modify the determining coefficient.

Accordingly, it is respectfully submitted that claim 1 is allowable over the cited art. Claims 2-9 depend on claim 1 and therefore, they are allowable for at least the reasons claim 1 is allowable.

Claim 14 was rejected in view of Vilcocq and Perrott et al. Claim 14 has been amended to include the features wherein digital values of the pre-emphasis filter are to be adjusted so that the transfer function is optimized according to predefined optimization criteria, and wherein the optimization criteria includes a mean squared error of an input to the pre-emphasis filter and an input to a voltage controlled oscillator of the fractional-N phase locked loop unit. As discussed above, Vilcocq does not disclose or even suggest such features. It is respectfully submitted that Perrott et al. does not make up for the lack of teaching of Vilcocq. Perrott et al. is directed to a digital compensation filtering technique that enables indirect phase locked loop modulation by adapting a digital FIR Gaussian transmit filter such that its filter characteristic reflects

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the intended modulation data amplification as well as enables Gaussian Frequency Shift Keyed modulation. Indeed, Perrott et al. don't even disclose or suggest a pre-emphasis filter and thus, don't even disclose or suggest digital values of the pre-emphasis filter being adjusted so that its transfer function is optimized according to predefined optimization criteria.

Accordingly, it is respectfully submitted that claim 14 is allowable over the cited art. Claims 15 and 18 depend on claim 14 and therefore, they are allowable for at least the reasons claim 14 is allowable.

Claim 19 was rejected in view of Vilcocq and Perrott et al. Claim 19 has been amended to include the features wherein digital values of the pre-emphasis filter are to be adjusted so that the transfer function is optimized according to predefined optimization criteria, and wherein the optimization criteria includes a mean squared error of an input to the pre-emphasis filter and an input to a voltage controlled oscillator of the fractional-N phase locked loop unit. As discussed above, Vilcocq does not disclose or even suggest such features. As discussed above, Perrott et al. does not make up for the lack of teaching of Vilcocq.

Accordingly, it is respectfully submitted that claim 19 is allowable over the cited art. Claims 22 and 32 depend on claim 19 and therefore, they are allowable for at least the reasons claim 19 is allowable.

Claim 26 was rejected in view of Vilcocq and Hasson. Claim 26 has been amended to include the feature wherein the optimization criteria are related to an input to the pre-emphasis filter and are related to an input to a voltage controlled oscillator of the fractional-N phase locked loop unit. As discussed above, Vilcocq does not disclose or even suggest such features. It is respectfully submitted that Hasson does not make up for the lack of teaching of Vilcocq. Hasson is directed to a transmitter that includes a switching amplifier and a sigma-delta N-PSK modulator. The sigma-delta N-PSK modulator includes a non-uniform polar quantizer. Indeed, Hasson doesn't even disclose or suggest a pre-emphasis filter and thus, doesn't even disclose or suggest digital values of the pre-emphasis filter being adjusted so that its transfer function is optimized according to predefined optimization criteria.

Accordingly, it is respectfully submitted that claim 26 is allowable over the cited art. Claims 27-28 depend on claim 26 and therefore, they are allowable for at least the reasons claim 26 is allowable.

IV. Claim Rejections under 35 U.S.C. § 102(e)

Claims 10-13, 23, 25 and 29 were rejected under 35 U.S.C. § 102(e) as being anticipated by Vilcocq et al.

This rejection is respectfully traversed and reconsideration is respectfully requested.

Claim 10 has been amended to include the feature of determining adjusted digital values so that a transfer function of a pre-emphasis filter is optimized according to predefined optimization criteria, wherein the optimization criteria are related to an input to the pre-emphasis filter and are related to an input to a voltage controlled oscillator of an analog fractional-N phase locked loop unit. Claim 29 has been amended to include the feature wherein the optimization criteria are related to an input to an adaptive pre-emphasis filter and are related to an input to a voltage controlled oscillator of the fractional-N phase locked loop unit. As previously discussed, Vilcocq does not disclose or even suggest such features and therefore, does not anticipate claims 10 and 29.

Accordingly, it is respectfully submitted that claims 10 and 29 are allowable over the cited art. Claims 11-12 and claims 30-31 depend on claims 10 and 29, respectively. Accordingly, claims 11-12 and 30-31 are allowable for at least the reasons claims 10 and 29 are allowable.

Claims 23 and 25 have been cancelled and therefore, it is respectfully submitted that the rejection is now moot.

Conclusion

Claims 1-12, 14-15, 18-19, 22 and 26-32 are believed to be in condition for allowance. Thus, a Notice of Allowance is earnestly solicited. Please contact the undersigned at (503) 796-2997 regarding any questions or concerns associated with the

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present matter. If any fees are due in connection with this paper, the Commissioner is authorized to charge Deposit Account 500393.

Respectfully submitted,

Schwabe, Williamson & Wyatt, P.C.

Dated: 05/08/2007 _____

/Kevin T. LeMond/ _____
Kevin T. LeMond
Reg. No. 35,933

Pacwest Center, Suite 1900
1211 SW Fifth Avenue
Portland, Oregon 97204
Telephone: 503-222-9981